

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Prud'homme, WC Examiner #: 69332 Date: 8/6/04
 Art Unit: 1711 Phone Number 302-1581 Serial Number: 10/603,844
 Mail Box and Bldg/Room Location: 15D71 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched.

Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and explain with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc. if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

SCIENTIFIC REFERENCE BR
 Sci. & Tech. Info. Cntr

AUG 9

Title of Invention: _____

Inventors (please provide full names): _____

Pat. & T.M. Office

Earliest Priority Filing Date: _____

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Formula (E) of Law 1. Sharks.

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>EL</u>	NA Sequence (#) _____	STN _____
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>8-11-04</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: _____	Other _____	Other (specify) _____

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FILE 'REGISTRY' ENTERED AT 09:29:22 ON 11 AUG 2004
 ACT TRU844/Q

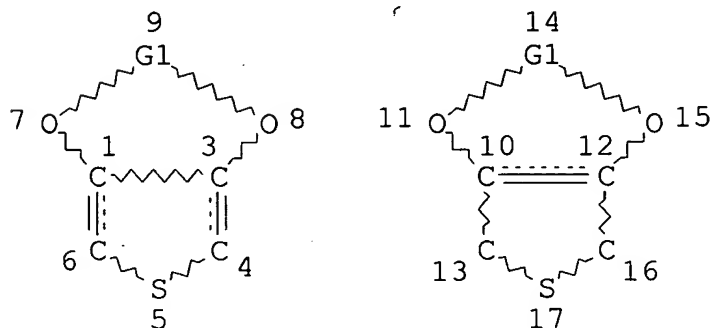
L1 STR
 L2 0 S L1
 L3 13 S L1 FUL
 DEL TRU844/Q
 SAV L3 TRU844/A

FILE 'CAOLD' ENTERED AT 09:31:35 ON 11 AUG 2004
 L4 0 S L3

FILE 'ZCAPLUS' ENTERED AT 09:31:45 ON 11 AUG 2004
 L5 4 S L3

FILE 'REGISTRY' ENTERED AT 09:32:03 ON 11 AUG 2004

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 L1 STR



REP G1=(1-4) C
 NODE ATTRIBUTES:
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE
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100.0% PROCESSED 1830 ITERATIONS
SEARCH TIME: 00.00.01

13 ANSWERS

=> file zcaplus
FILE 'ZCAPLUS' ENTERED AT 09:32:16 ON 11 AUG 2004
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=> d 15 1-4 ibib abs hitstr hitrn

L5 ANSWER 1 OF 4 ZCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2004:485814 ZCAPLUS
DOCUMENT NUMBER: 141:38620
TITLE: Preparation of 2,2'-di-(3,4-alkylenedioxythiophene) derivatives by dehydration of dihydrothiophenes.
INVENTOR(S): Reuter, Knud
PATENT ASSIGNEE(S): H.C. Starck GmbH, Germany
SOURCE: Eur. Pat. Appl., 26 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	
EP 1428827	A1	20040616	EP 2003-27357	20031127
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10257539	A1	20040701	DE 2002-10257539	

US 2004122239

A1

20040624

US 2003-727736

200212
10

200312
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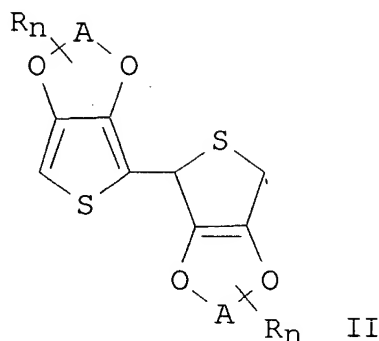
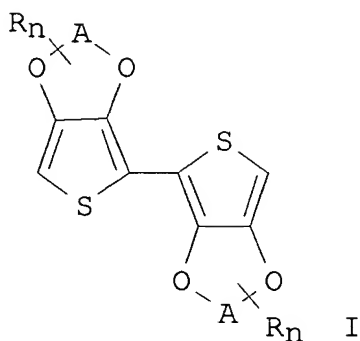
PRIORITY APPLN. INFO.:

DE 2002-10257539

A

200212
10

GI



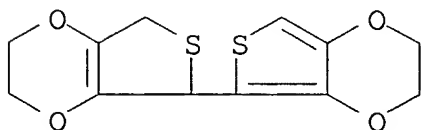
AB Title compds. [I; A = C2-4 alkylene; R = (substituted) alkyl, cycloalkyl, aryl, hydroxyalkyl, OH; n = 0-8], were prepd. by treatment of the corresponding dihydro derivs. (II; variables as above) with a dehydrating agent. Thus, II (A = CH₂CH₂; R = H) (prepn. given) was refluxed 10 h with chloranil in xylene to give 63% 2,2'-di-(3,4-ethylenedioxythiophene).

IT 639092-30-1P 639807-56-0P 704897-87-0P

(prepn. of di(alkylenedioxythiophene) derivs. by dehydration of dihydrothiophenes)

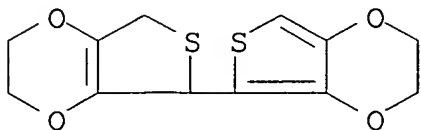
RN 639092-30-1 ZCAPLUS

CN 5,5'-Bithieno[3,4-b]-1,4-dioxin, 2,2',3,3',5,7-hexahydro- (9CI) (CA INDEX NAME)



RN 639807-56-0 ZCAPLUS

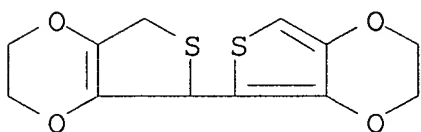
CN 5,5'-Bithieno[3,4-b]-1,4-dioxin, 2,2',3,3',5,7-hexahydro-2,2' (2,3'-,2',3 or 3,3')-dimethyl- (9CI) (CA INDEX NAME)



2 (D1-Me)

RN 704897-87-0 ZCAPLUS

CN [5,5'-Bithieno[3,4-b]-1,4-dioxin]-?,?'-dimethanol, 2,2',3,3'-tetrahydro- (9CI) (CA INDEX NAME)



2 [D1-CH₂-OH]

IT 639092-30-1P 639807-56-0P 704897-87-0P

(prepn. of di(alkylenedioxythiophene) derivs. by dehydration of dihydrothiophenes)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 4 ZCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:5184 ZCAPLUS

DOCUMENT NUMBER: 140:77585

TITLE: Manufacture of alkylenedioxythiophene dimers and trimers as precursors for conductive polymers
INVENTOR(S): Reuter, Knud; Nikanorov, Valery A.; Bazhenov, Vassily M.

PATENT ASSIGNEE(S): H.C. Starck Gmbh, Germany

SOURCE: Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

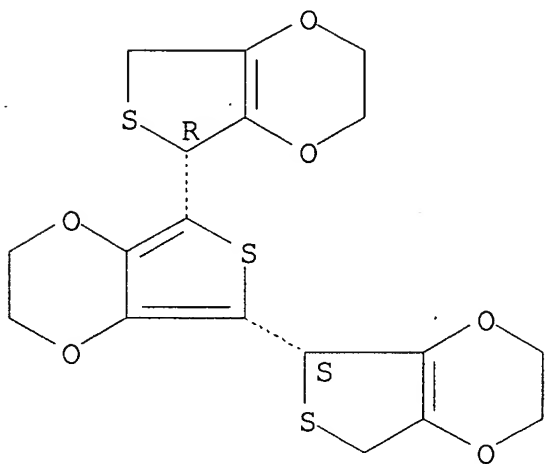
PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
EP 1375560	A1	20040102	EP 2003-13779	200306 18
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
DE 10229218	A1	20040122	DE 2002-10229218	200206 28
US 2004031951	A1	20040219	US 2003-603844	200306 25
JP 2004035555	A2	20040205	JP 2003-188548	200306 30
PRIORITY APPLN. INFO.:			DE 2002-10229218	A 200206 28
OTHER SOURCE(S): GI	MARPAT 140:77585			

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

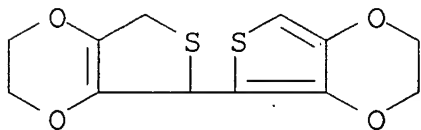
AB The alkylenedioxythiophene dimers and trimers [I; A =
(un)substituted C1-4 alkylene; R = (un)substituted C1-18 alkyl,
(un)substituted C5-12 cycloalkyl, (un)substituted C6-14 aryl, etc.;
n = 0, 1; x = 0-8], precursors for manuf. of neutral or cationic
polythiophenes (II; m = 2-200; A, R, x as above), were manufd. by
dimerization and trimerization of alkylenedioxythiophenes (III; A,
R, x as above) in the presence of Lewis acids and/or protic acids as
catalysts. For example, stirring a soln. of 2 mmol
ethylene-3,4-dioxythiophene (EDT) in 1.5 mL CH₂Cl₂ with 0.036 mmol
BF₃·OEt₂ (CH₂Cl₂ soln.) at 0° for 4 h under Ar gave
16% racemic EDT dimer and 6% EDT trimer (mixt. of stereoisomers).
IT 639092-32-3P 639807-56-0P 639807-57-1P
639807-58-2P 639807-59-3P
(manuf. of dimers and trimers from alkylenedioxythiophenes)

RN 639092-32-3 ZCAPLUS
 CN 5,5':7',5''-Terthieno[3,4-b]-1,4-dioxin,
 2,2',2'',3,3',3'',5,5'',7,7''-decahydro-, (5R,5''S)- (9CI) (CA
 INDEX NAME)

Absolute stereochemistry.

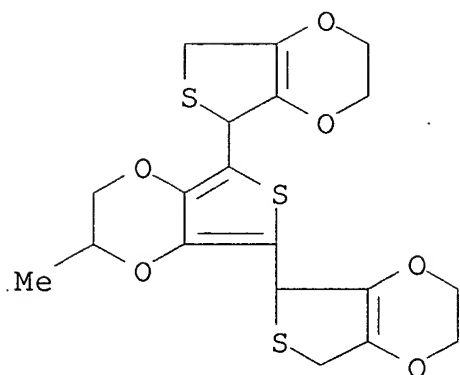


RN 639807-56-0 ZCAPLUS
 CN 5,5'-Bithieno[3,4-b]-1,4-dioxin, 2,2',3,3',5,7-hexahydro-2,2' (2,3'-
 ,2',3 or 3,3')-dimethyl- (9CI) (CA INDEX NAME)



2 (D1-Me)

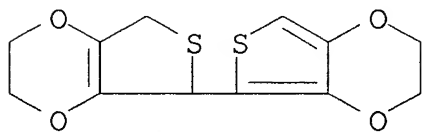
RN 639807-57-1 ZCAPLUS
 CN 5,5':7',5''-Terthieno[3,4-b]-1,4-dioxin,
 2,2',2'',3,3',3'',5,5'',7,7''-decahydro-2,2',2'' (2,2',3''-,2,3',3''
 or 2',3,3'')-trimethyl- (9CI) (CA INDEX NAME)



2 (D1-Me)

RN 639807-58-2 ZCAPLUS

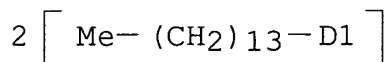
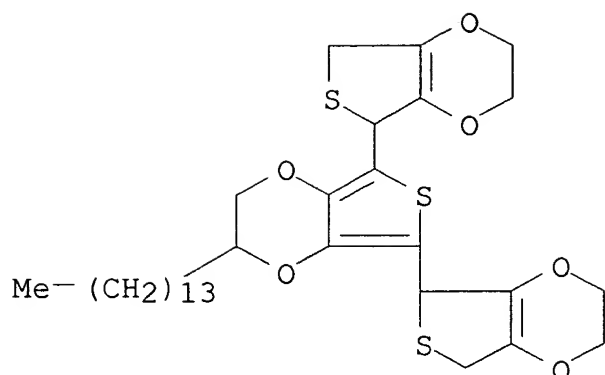
CN 5,5'-Bithieno[3,4-b]-1,4-dioxin, 2,2',3,3',5,7-hexahydro-2,2' (2,3'-,2',3 or 3,3')-ditetradecyl- (9CI) (CA INDEX NAME)



2 [Me- (CH₂)₁₃-D1]

RN 639807-59-3 ZCAPLUS

CN 5,5':7',5''-Terthieno[3,4-b]-1,4-dioxin,
2,2',2'',3,3',3'',5,5'',7,7''-decahydro-2,2',2'' (2,2',3''-,2,3',3''
or 2',3,3'')-tritetradecyl- (9CI) (CA INDEX NAME)

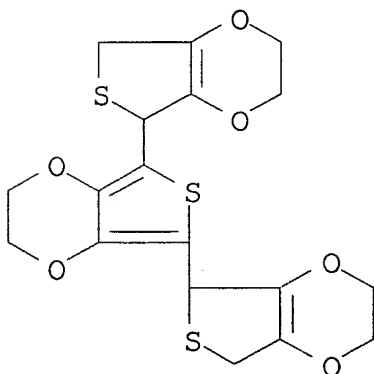


IT 639092-31-2P

(mixt. of isomers; manuf. of dimers and trimers from
alkylenedioxythiophenes)

RN 639092-31-2 ZCAPLUS

CN 5,5':7',5''-Terthieno[3,4-b]-1,4-dioxin,
2,2',2'',3,3',3'',5,5'',7,7''-decahydro- (9CI) (CA INDEX NAME)

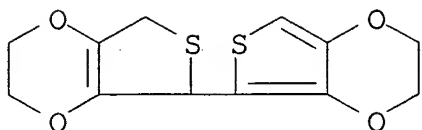


IT 639092-30-1P

(racemate; manuf. of dimers and trimers from
alkylenedioxythiophenes)

RN 639092-30-1 ZCAPLUS

CN 5,5'-Bithieno[3,4-b]-1,4-dioxin, 2,2',3,3',5,7-hexahydro- (9CI) (CA
INDEX NAME)



IT 639092-32-3P 639807-56-0P 639807-57-1P
639807-58-2P 639807-59-3P
(manuf. of dimers and trimers from alkylenedioxythiophenes)

IT 639092-31-2P
(mixt. of isomers; manuf. of dimers and trimers from
alkylenedioxythiophenes)

IT 639092-30-1P
(racemate; manuf. of dimers and trimers from
alkylenedioxythiophenes)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR
THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L5 ANSWER 3 OF 4 ZCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:797819 ZCAPLUS

DOCUMENT NUMBER: 140:5033

TITLE: Thiaporphyrins with one, two and four
unsubstituted meso-carbons: Synthesis and
functionalization

AUTHOR(S): Agarwal, Neeraj; Hung, C.-H.; Ravikanth, M.
CORPORATE SOURCE: Department of Chemistry, Indian Institute of
Technology, Bombay, 400076, India

SOURCE: European Journal of Organic Chemistry (2003),
(19), 3730-3734

CODEN: EJOCFK; ISSN: 1434-193X

PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA

DOCUMENT TYPE: Journal

LANGUAGE: English

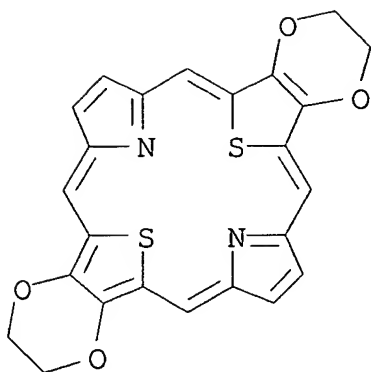
OTHER SOURCE(S): CASREACT 140:5033

AB Thiaporphyrins with one, two and four unsubstituted meso carbons
were synthesized from easily available thiophene diols. The
reactivity at these carbons was demonstrated by carrying out series
of reactions and some very useful functional groups were introduced.
Crystal structure of one product was also reported.

IT 626253-99-4P
(prepn. and functionalization of thiaporphyrins with one, two and
four unsubstituted meso-carbons)

RN 626253-99-4 ZCAPLUS

CN 5,24:12,17-Diepthio-7,10:22,19-dinitrilocycloeicosa[1,2-b:11,12-
b']bis[1,4]dioxin, 2,3,14,15-tetrahydro- (9CI) (CA INDEX NAME)



IT 626253-99-4P

(prepn. and functionalization of thiaporphyrins with one, two and four unsubstituted meso-carbons)

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L5 ANSWER 4 OF 4 ZCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:434944 ZCAPLUS

DOCUMENT NUMBER: 137:232315

TITLE: Optical and redox properties of a series of
3,4-ethylenedioxythiophene oligomersAUTHOR(S): Apperloo, Joke J.; Groenendaal, L. "Bert";
Verheyen, Hilde; Jayakannan, Manickam; Janssen,
Rene A. J.; Dkhissi, Ahmed; Beljonne, David;
Lazzaroni, Roberto; Bredas, Jean-LucCORPORATE SOURCE: Laboratory for Macromolecular and Organic
Chemistry, Eindhoven University of Technology,
Eindhoven, 5600 MB, Neth.SOURCE: Chemistry--A European Journal (2002), 8(10),
2384-2396

CODEN: CEUJED; ISSN: 0947-6539

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 137:232315

AB The optical and redox properties of a series of 3,4-
ethylenedioxythiophene oligomers (EDOT_n, n = 1-4) and their
β,β'-unsubstituted analogs (T_n, n = 1-4) are described.
Both series are end capped with Ph groups to prevent irreversible
α-coupling reactions during oxidative doping. Absorption and
fluorescence spectra of both series reveal a significantly higher
degree of intrachain conformational order in the EDOT_n oligomers.
Oxidn. potentials (EPA1 and EPA2) detd. by cyclic voltammetry reveal
that those of EDOT_n are significantly lower than the corresponding

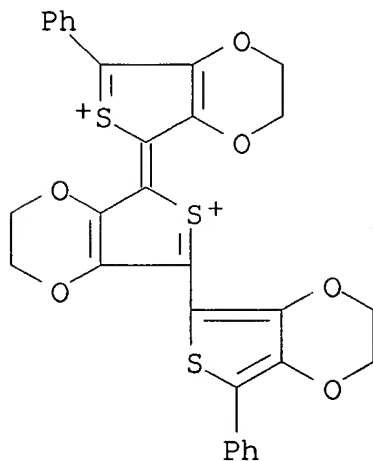
Tn oligomers as a consequence of the electron-donating 3,4-ethylenedioxy substitution. Linear fits of EPA1 and EPA2 vs. the reciprocal no. of double bonds reveal significantly steeper slopes for the EDOTn than for the Tn oligomers. This could indicate a more effective conjugation for the EDOTn series, confirmed by the fact that coalescence of EPA1 and EPA2 is reached already at relatively short chain lengths (≈ 5 EDOT units) in contrast to the Tn series (> 10 thiophene units). The stepwise chem. oxidn. of the EDOTn and Tn oligomers in soln. was carried out to obtain radical cations and dications. The energies of the optical transitions of the radical cations and dications as detd. by UV/Vis/NIR spectroscopy were similar for the two series. These spectroscopic observations are consistent with quantum-chem. calcns. performed on the singly charged mols. Cooling solns. contg. T2 \bullet^+ , T3 \bullet^+ , EDOT2 \bullet^+ , and EDOT3 \bullet^+ revealed the reversible formation of dimers, albeit with a some-what different tendency, expressed in the values for the dimerization enthalpy.

IT 459409-86-0

(prepn. and optical and redox properties of a series of 3,4-ethylenedioxythiophene oligomers)

RN 459409-86-0 ZCAPLUS

CN 5H-1,4-Dioxino[2,3-c]thiolium, 5-(2,3-dihydro-7-phenyl-5H-1,4-dioxino[2,3-c]thiolium-5-ylidene)-7-(2,3-dihydro-7-phenylthieno[3,4-b]-1,4-dioxin-5-yl)- (9CI) (CA INDEX NAME)



IT 459409-86-0

(prepn. and optical and redox properties of a series of 3,4-ethylenedioxythiophene oligomers)

REFERENCE COUNT: 81 THERE ARE 81 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Truong 10/603,844

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